

**SUBJECT: CORRECTION TO WRONG DESCRIPTION IN TERIOS (J2 Series)
TECHNICAL INFORMATION - No.9514 (6-35, 6-36)-**

It is regrettable to inform you that there was a wrong description in the new TERIOS Technical Information. This service bulletin provides the applicable section and correct description.

Applicable Service Manual : Technical Information, No. 9514 in CD version Service manual for TERIOS (J200, J210 and J211), No. 9586

Applicable Section and Page : 6-35, 6-36 (TRANSMISSION / TRANSAXLE)

The correct descriptions are shown inside a square. (For example : closed and)
Please refer to next page.

- The lock-up clutch is engaged or disengaged by operating the lock-up clutch solenoid valve and the duty solenoid valve.
- When engaging the lock-up clutch, first the lock-up solenoid valve is turned on and then the duty solenoid valve is operated to regulate the hydraulic pressure on the release side. The amount of torque transmitted by the lock-up clutch is adjusted in this way at the specified rate for the specified time in order to reduce the shock caused by the engagement of the lock-up clutch.
- When disengaging the lock-up clutch, a hydraulic pressure is applied gradually to the release side by operating the duty solenoid valve. When the lock-up clutch is disengaged, the lock-up clutch solenoid valve is turned off.

Lock-up clutch operative gear

		1st	2nd	3rd	4th
D position	Direct coupling control	×	×	○	○
	Speed reduction control	×	×	○	○

❖ REFERENCE ❖

○=Operated ×=Not operated

Operations of solenoid valves

Lock-up clutch	Lock-up clutch solenoid valve	Duty solenoid valve
OFF	×	×
OFF⇔ON (Transient)	○	Δ
ON (Direct coupling)	○	○
Speed reduction control	○	Δ

❖ REFERENCE ❖

○=Energized Δ=Under duty control ×=Not energized

Slip Lock-up Control

- During low-speed driving or deceleration, slip lock-up control is performed by making the clutch slip slightly.
- In **slip lock-up** control, the hydraulic pressure on the release side is regulated by operating the duty solenoid valve so that the engine speed reaches the target speed.

Slip lock-up operative gears

		1st	2nd	3rd	4th
D position	Slip lock-up control	×	×	○	○

Operations of solenoid valves

Lock-up clutch	Lock-up solenoid valve	Duty solenoid valve
Under slip lock-up control	○	Δ

❖ REFERENCE ❖

○=Energized Δ=Under duty control

Uphill and downhill gear shift control

- Uphill and downhill gear shift control restricts shifting up to 4th gear and locking up gears on a road sloping up and down alternately in order to enable the vehicle to run lightly on sloping roads without sacrificing economical efficiency on level roads. On downhill roads,

this control ensures that moderate engine braking force is produced even if gears are shifted down to 3rd gear.

- The condition of an uphill or downhill road is determined by comparing the actual acceleration calculated from the vehicle speed with the vehicle acceleration on a level road calculated from the throttle opening, vehicle speed and gear used.
- If it is determined that the road slopes up, shifting up to 4th gear and locking up gears are restricted.
- When the brakes are applied on a road that is judged to slope down, gears are shifted down to 3rd gear.
- To give priority to the driver's intention, uphill and downhill gear shift control is exercised only when the shift lever is in the D position and the O/D switch is set to ON (O/D OFF lamp)

Squat Control

- If gears are shifted from the P to D (2 or L) position to start the vehicle with the throttle fully closed and the brakes applied, gears are shifted temporarily to the 2nd position (N→2nd→1st) to prevent the vehicle from squatting down because of an abrupt change in torque.

Fail-Safe Function

- If an error occurs in the signal input/output system of the gear shift control computer, the fail-safe function enables the computer to continue control to minimize degradation in driving performance.
- When the system has recovered from an error, the fail safe-safe function is deactivated but the diagnosis results (except certain error codes) remain stored in memory.
- When the fail-safe function is activated, the warning lamp (O/D OFF lamp) blinks. (Except for certain functions)

Diagnosis Function

- The diagnosis function refers to a self-diagnosis function provided for the computer as a means of informing the service person of the failed item in the event of a failure in the input/output system. There are a total of 22 diagnosis items, including 6 solenoid valve-related items checked under normal conditions. In the event of a failure, the computer saves information on the failed item into memory. The storage device is powered from the battery, so information stored in memory is not cleared by turning off the ignition switch. In addition to this function, a warning function is provided to inform the driver of the occurrence of a system failure if it occurs during driving.

◆ CAUTION ◆

Some items are not stored in memory.

Centrifugal Hydraulic Canceler

- Pistons used to actuate clutches mounted on rotating parts, such as reverse and forward clutches, sometimes operate, causing a gear shift shock, even if no hydraulic pressure is applied to them, because a centrifugal hydraulic pressure produced by rotation acts on them, causing them to develop thrust.
- A centrifugal hydraulic mechanism is provided for the reverse clutch (C1), forward clutch (C2) and rear clutch (C3). In this mechanism, the canceling chamber placed on the opposite side of the clutch hydraulic chamber, as shown in the figure below, cancels the centrifugal hydraulic pressure produced in the clutch hydraulic chamber, using the centrifugal hydraulic pressure produced in the canceling chamber. This mechanism allows the engagement and release timing to be adjusted minutely without being affected by a centrifugal hydraulic pressure, and thus serves to ensure smooth gear shifting at all speed ranges.